

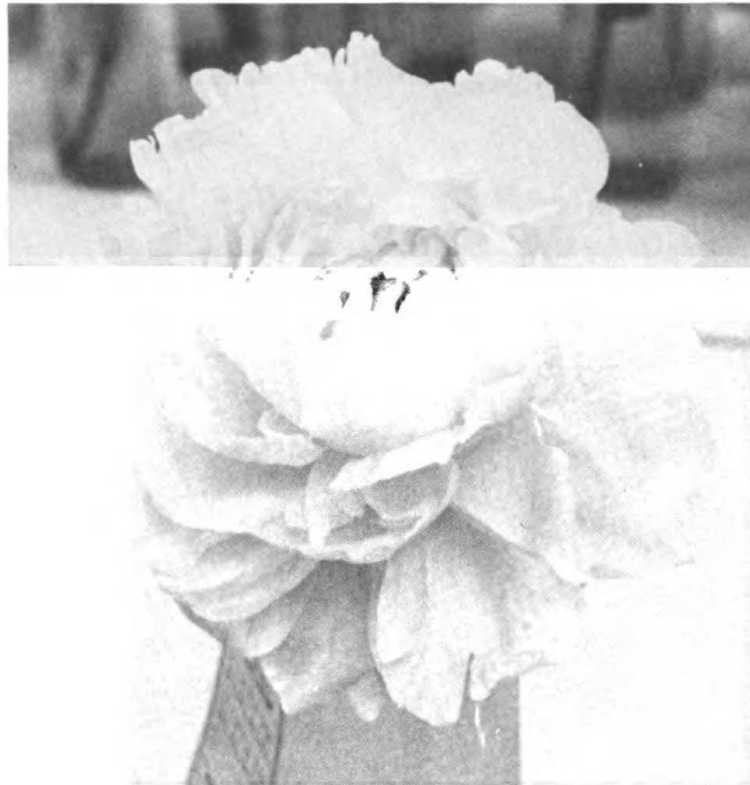
SEPTEMBER 1987

NO. 263



The American Peony Society Bulletin

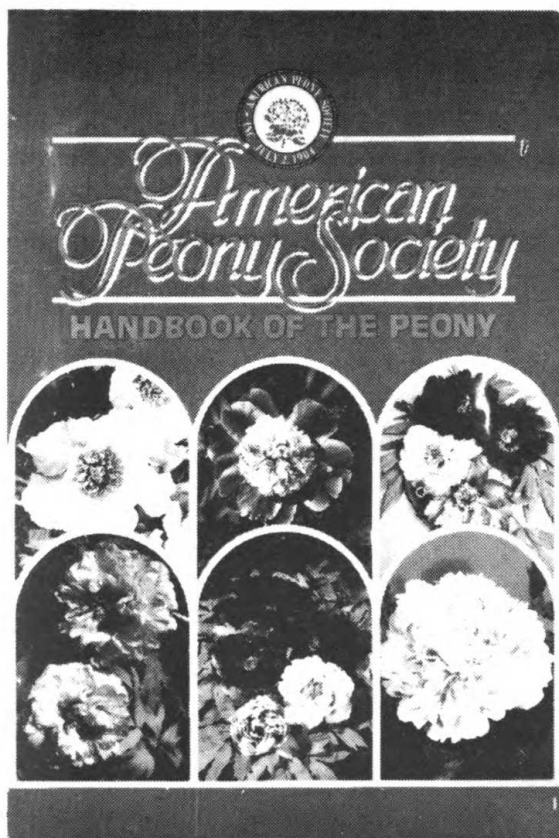
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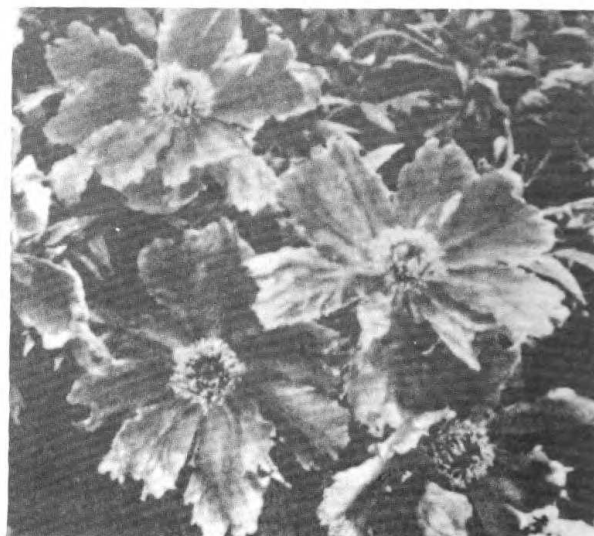
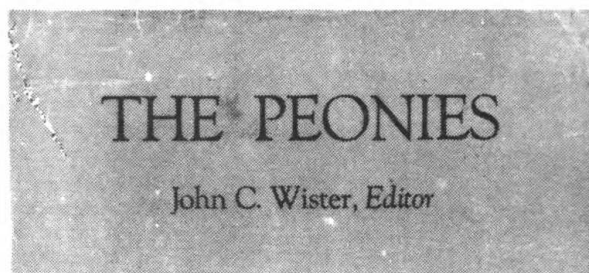
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edited by J. C. Wister

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DEPT. OF REGISTRATION

The department was formed to properly supervise the nomenclature of the different varieties and kinds of peonies. All new varieties should be registered to avoid duplication of names.

Greta M. Kessenich, Secretary

OBJECTIVES

The Articles of Incorporation state: Section (2) That the particular objects for which the corporation is to be formed are as follows: To increase the general interest in the cultivation and use of the Peony; to improve the methods of its cultivation and methods of placing it upon the market; to increase its use as a decorative flower; to bring about a more thorough understanding between those interested in its culture; to properly supervise the nomenclature of the different varieties and kinds of peonies; to stimulate the growing and introduction of improved seedlings and crosses of such flower; and to promote any kind of the general objects herein specified by holding or causing to be held exhibitions, and awarding or causing or procuring to be awarded, prizes therefor or in any other manner.

The AMERICAN PEONY SOCIETY BULLETIN is the official Society publication. It is mailed postpaid quarterly to all members in good standing.

MEMBERSHIP

The By-Laws state: All reputable persons, professional or amateur, who are interested in the Peony; its propagation, culture, sale and development are eligible for membership. Dues are as follows:

Single Annual	\$ 7.50	Junior or member family	\$ 2.50
Single Triennial	20.00	Life	150.00
Family Annual	10.00	Commercial membership	25.00
Family Triennial	27.50		

Family membership, any two related members in same household

Junior membership, any age through completion of high school

For those who wish to further support the Society, the following special memberships are available.

Contributing	\$25.00	Supporting	\$100.00
Sustaining	50.00	Patron	250.00



AMERICAN Peony Society Bulletin



September 1987 — No. 263

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FROM YOUR PRESIDENT

DON HOLLINGSWORTH

Dear Friends:

Not so long ago, I was wondering if the number of persons interested in cultivating plants—"real" gardening, to some of us—wasn't about to dwindle away. It takes more than appreciation of the aesthetics of well-grown plants to get satisfaction from the hands-on process of causing them to do well. For something which has to be started now for satisfaction two or three years hence, requires an additional measure of faith and confidence.

For a while it looked as though all the publicity was going to plants which offer "instant" satisfaction. Thankfully, my concerns can now be shelved. The Peony Society grows. The demand for our how-to books and other literature, continues at a healthy pace; and, every mail delivery seems to bring another individual inquiry on the growing and care of peonies, reassuring that new people are out there wanting to know.

We constantly need to add to our number, persons who will make a special effort to show just how much can be done with peonies. That is why I was concerned about the reservoir of good cultivators and how it stands for the future. To produce good peonies, it takes good cultivators. Then it takes an additional measure of skill to get them exhibited well.

My appeal to all Members: Please do what you can to encourage interest in peonies on the part of the good gardeners you know. And, get ready to share your good peonies in whatever way you can—in the work place, in public settings, at horticultural displays, and in judged exhibitions. New recruits need good models of what can be done. Each of us can provide some of the model needed.

Best wishes for a good Autumn season. I hope each will be able to add a new peony of your choice, and encourage others to do so. Refer anyone who will listen, to "It's the Soil," by Don Meyer, in the March 1987 Bulletin, an up-to-date treatment of bed preparation in the modern urban setting.

Sincerely, Don Hollingsworth

NORMA VOLZ

Marvin Karrels, Milwaukee, Wisconsin

Twenty years ago when I was in the hospital, two close friends of Laura and I visited me—Al and Norma Volz. They brought a peony bloom to show me. As I gazed at that gorgeous bloom, I told them it was one of the most beautiful peonies I had ever seen. Even though it was but one bloom, it permeated the immediate area with a wonderful perfume. Norma than told me the story of this seedling.

It was Norma's custom to plant a dozen or two of peony seeds each year. Some grew and developed a flower. So one year she asked me to come and visit her garden at Okauchee Lake to see these seedlings. There were about eight or ten in bloom. Most were single; however, one caught my attention. I told Norma this one had all the earmarks of a future great. I told Al to dig and plant the divisions and if it came true to its maiden bloom to name it and register it. Al said he had already dug and replanted it, and this bloom that he brought today was from this replant. He said he registered it and named it after Norma because she had selected the seed and grew the seedlings. Norma told me that the seeds came from the variety Miss America, and she said that only the bees knew the pollen parent. Norma gave me two divisions from this replant. I have grown them now some twelve years and rate it as first or second in my garden. I rate it as a blush in A.P.S. color chart—a hint of cream and a tint of pink. It is a full double of fine rose form. It brings high quality to our early lactifloras. The plant is vigorous with strong heavy stems.

At a meeting of the Board of the A.P.S., it was brought up for consideration of the gold medal award—it was carried unanimously. It now takes its place amongst the elite of our gold medal peonies of past years.

LUTEA HYBRID TREE PEONIES

Anthony De Blasi, Route 1, Box 99, West Newfield, Maine 04095

A full double peony with the color of a daffodil was once only a dream. Now it is given the name "Alice Harding," a landmark tree peony, among the first yellow peonies introduced. There are many other beautiful hybrids bearing various shades of yellow, starting with pale silvery tones and deepening to gold. The quest for yellow brought other colors as well, such as amber, red, and pink. The forms in this group vary from single to semi-double.

The peony world's Midas touch began with the discovery of *Paeonia lutea* by French Missionaries in southern China, a century ago. Hybridists like Victor and Emil Lemoine, Louis Henry, and A. P. Saunders crossed this shy, shrubby yellow peony with flowers like buttercups with Chinese and Japanese tree peonies (*P. suffruticosa*) to yield this new color in peonies.

The early European work was done with the "thousand-petaled" Chinese tree peonies. Combining *lutea*'s nodding habit with such full flowers resulted in many hybrids with blossoms that frequently hide in

the foliage. In America, Saunders used the lighter, stiffer-stemmed suffruticosa tree peonies for his crosses. These hybrids are more successful in displaying their blooms above the foliage. The Saunders hybrids include crosses with the black-red *P. potanini*, similar to *P. lutea*.

In the Gratwick-Daphnis collaboration, second, third, and fourth-generation hybrids were worked over to reveal some of the deeper-seated genetic possibilities of the tree peony. The goal in this work has been to infuse the lutea hybrid with the beauty and superior habit of the suffruticosa peony.

Lutea hybrids bloom when lilacs and Japanese tree peonies fade, and roses and herbaceous peonies come on stage. They are not an intermission between acts, however, but a fine show in themselves. These unique shrubs that may exceed five feet in height and breadth should be situated where their individual beauty may be observed without distraction. They need not be isolated, however. Tree peonies spending the Summer flanking a stairway or associating with a piece of garden sculpture, are tree peonies put to good use. They furnish graceful contrast to bolder, darker plants, such as rhododendrons. They also serve in landscaping, where an element of informality is desired.

However they are used, leave plenty of room around them; avoid boxing them in among shrubbery; keep them forward—they are not “background” plants. An open location that is well drained and doesn’t bake in afternoon sun, is best. Unless they are container-grown, tree peonies should be planted in the Fall. Dig a large hole, as for a fruit tree, and return only good soil mixed with a generous supply of compost and/or peatmoss, plus two pounds of bonemeal per planting hole. The junction of root and stem should be four to five inches deep. Space the plants six feet apart. Don’t pound the soil around the roots. Flood the soil around the roots with a couple of buckets of water. If wind is a problem, set a heavy stake in the planting hole, centering the stake as nearly as possible, being careful not to injure the roots. As new stems develop and the plant becomes bushy, the stems may be loosely tied to this stake. For permanence, choose a metal pipe. Wait until early Summer to tie the youngest stems, when they have stopped growing.

Apply a coarse mulch five- to -six inches thick over the roots the first winter, such as oak leaves, wood chips, or straw. Thereafter, a two-inch mulch of finer material, such as dried grass clippings, is beneficial.

One annual feeding of low-nitrogen fertilizer, right after blooming, is sufficient nourishment. I have used bonemeal—about a cup scratched into the soil around each plant—for years with excellent results. Like other peonies, these plants must not be pushed, just nudged a bit. Never prune them. A branch that juts out where you don’t want it, or a dead branch, is all the wood that should be removed. [These cultural tips apply to other types of tree peony as well as lutea hybrids.]

PUBLIC PLANTING

The American Peony Society has been asked for peony root for a public planting at the Zoological Gardens at Detroit, Michigan.

The Zoological Gardens of Detroit are located at Royal Oak, a suburb of Detroit.

The area for peonies has been prepared and will be planted when any root or roots are received. Mr. Harris Olson of Birmingham has made a commitment that he will plant and care for the peonies there. He has been a member of the Society for many years. Ten years ago, he donated and planted herbaceous and tree peonies on the grounds of the Congregational Church of Birmingham. He has made those grounds into a picturesque park, which is open to the public.

The peony roots that you send for the Zoological Garden project will receive every attention, with the proper name displayed by each plant. Roots should be sent to Mr. Olson direct.

His address:

Mr. Harris Olson Zoological Garden project
1141 Maryland Blvd.
Birmingham, Michigan 48009

So that you may know, he is personally donating and planting 400 daylilies and daffodil bulbs on these grounds. Other Horticultural Societies will also be represented.

THANKS TO THE KLEHM NURSERY

The National Show is always the big event of the American Peony Society. The dates of the show are set with the blooming date of the peony in mind. Sometimes Mother Nature does not cooperate and the peonies have bloomed, or sometimes the late varieties are still in bud.

It is unpredictable to select the correct dates a year in advance. We can always depend on a certain number of blooms as the exhibitors bag the buds in the field, cut, and store in temperature-controlled rooms. When the show date arrives, so do the exhibitors with their blooms.

At that time, we all anxiously await to see the number of flowers that will be exhibited, representing the Society. The show has always reflected the bloom season.

To support and contribute, the Klehm Nursery brought a huge truckload of crates [and more crates] of peonies from their Nursery in Illinois, to Minneapolis, Minnesota in 1986. There were several thousand blooms which filled the shipping area of the Apache Center.

This year, 1987, at Kingwood Center, Mansfield, Ohio, again the Klehm Nursery trucked crates of peony blooms from Illinois, for this exhibition. They brought over 8000 blooms. The display of these peonies was magnificent, and a sight that remains vivid in the minds of all visitors.

We thank the Klehm Nursery for their generosity, and for making the National exhibition so spectacular.

— 6 —

1987 SEED COUNTER

Bill Seidl, 732 S. 19th St., Manitowoc, Wisconsin 54220

Seed-harvest time is here, and members are asked to send surplus seed to the Counter, for distribution to other members requesting them. Individual circumstances dictate how donors label and care for seed. Some send them in mixtures, or by color, or by seedparent cultivar. Some send them dried out, and others in plastic bags. (The latter method may promote some mold development but they will be rinsed in a clorox solution, and the obviously bad seed are discarded.) Regardless, all types of seed are appreciated and in demand.

Recipients should pay for their seeds after receipt. Cost is \$1 plus postage; folding money preferred, but if by check or money order, make it out to William J. Seidl. I expect to complete mailings by year's end. Members should order by approximately Dec. 15. The December Bulletin will carry more specific listing of available seed, but if you receive late bulletin delivery, you can order anytime before then. Simply state the general type(s) of seed desired (lactiflora, herbaceous hybrid, suffruticosa) and color. Your request will be honored as early as possible. Late orders will go into the 1988 file. Late orders for 1986 seed (even though unacknowledged by me), are in the current file and will be filled without reordering.

Last year's orders included requests for seeds of yellow tree peonies (i.e. shrub hybrids), Ito hybrids, and various species. The first two types are usually too scarce to be donated to the Counter. As for species from my own garden, I expect to harvest some lobata (*peregrina*) seed and *tenuifolia* hybrid seed (derived from 'Laddie'), not the pure species. Perhaps other donors will have similar seed.

REGISTRATIONS

CLOUD BURST—(Lyman D. Glasscock, Elwood, Illinois)

Registered by Elizabeth Falk. June 1, 1987.

Double white hybrid, 3 ft. in height, good strong stems with deep green foliage. No stamens, pollen, or seeds. Fragrant. Extra large flower. Parentage and first-year bloom unknown.

MAY FROST—(Lyman D. Glasscock, Elwood, Illinois)

Registered by Elizabeth Falk. June 1, 1987.

Deep rich pink, double hybrid with frosted pink edges. Parentage and first-year bloom is unknown. The form is flat, with stamens, pollen, and seeds. No fragrance. Mid-season bloom, excellent stem strength, 3 feet, with large deep green leaves.

NIPPON TREASURE—(Lyman D. Glasscock, Elwood, Illinois)

Registered by Elizabeth Falk. June 1, 1987.

Red single Japanese hybrid. Parentage and first-bloom, unknown. Late, 3 ft. in height, average stem strength with abundant amount of bloom. It has stamens and seeds; no pollen. The flower is a vibrant red with petals in a single row with a red and gold combination feathery center.

IN MEMORIAM

57 YEARS

Fifty-seven years is the life span of some of us. Fifty-seven years ago, Laura and I said our wedding vows. We have now come to the final one—"Until death do you part." Laura passed away December 15, 1986.

She always had a deep interest in the American Peony Society and always looked forward to the quarterly Bulletin. She insisted on having her own membership, so for many years we received two quarterly Bulletins. Mine was a life membership. She liked to read the comments of our members about their own peonies. For more than 35 consecutive years she attended National shows and annual meetings with me. However, she almost missed one show because she had a broken leg that year. I called Roy Gayle about it and he said, "Bring her down anyway; I'll have a wheelchair ready." So Laura did attend that show and she was wheeled into the showroom, and into the banquet room.

She always looked forward to meeting the old-timers, the Lienaus, the Roy Gayles, the Doctor Hydes, the Sindts, and the Christmans, among others. She especially looked forward to seeing our national secretary, Greta Kessenich. She said it was like one big happy family.

Laura had many favorite peonies; however, each blooming season when I went out to the country garden she always said, "Marvin, bring along a dozen Norma Volz and a dozen Gay Paree." She said that the fragrance of Norma Volz was the sweetest and longest lasting of all, and Gay Paree, with its deep rose color, kept longest in a vase. Rest assured, that these two peonies will always be at the head of her crypt in future years.

Marvin Karrels

["Elaine, my daughter, and I, would like to thank all the members of the American Peony Society for their expressions of condolences and support"—Sincerely, Marvin.]

June 3, 1987

Today, I, [William H. Krekler, of 8160 Edmaru Avenue, Whittier, California 90602], registered five new daylilies, which makes 1001 flowers that I have created, grown, named, and registered in my 87 years of life—(383 peonies and 618 daylilies). The Klehm Nursery of South Barrington, Illinois 60010, has purchased all of my flower creations for many years, from both my homes in California, and in Ohio.

Some of my better peony creations are: Becky, Bessie, Bev, Brides Dream, Brucie, Camden, Cora Stubbs, Golly, James Lewis, John Whitis, Kevin, Renykins, etc.

Some of my better daylily creations are: Centerville, Dalton Batten, Earlham, Firestorm, Friend Roy, Greta, Great Guest (Spider), Illinois Pride, My Triumph, Orveda, Shin Low, Upper Crust, etc.



Photographs by Edward Lee Michau

Douglas Brand
Dinner Plate
Myron Branson

Old Faithful
Nick Shaylor

HERBACEOUS PEONY DISEASE AND PEST UPDATE

Also Peony Lists — p. 39-40-41-42

(Prepared by Roy G. Klehm for the PERENNIALS FOR THE LATE SPRING AND SUMMER GARDEN Continuing Education Course)

While peony diseases haven't changed since Alice Harding's time, and her common sense garden sanitation principles remain valid, advances have been made in chemical treatment results. Control of the diseases and pests that attack herbaceous peonies has always been a major concern. The disease and pest problems that pose the greatest concern for gardeners are:

Botrytis cinerea (gray mold)

Cladisporium paeoniae (leaf blotch)

Peony Rootknot Nematode

The control of **Botrytis cinerea** and **Cladisporium paeoniae** are essentially the same, as both of these organisms have a similar life cycle. Three sprayings of recommended fungicides during the growing season are necessary if severe outbreaks of these two diseases have occurred in the past or are anticipated.

The first spray should be done in the Spring during the early growth of the peonies. This coincides with the time the plants are most vulnerable and the disease is active. This spraying helps the plants' own defense system fight off infection from any inoculum that may have overwintered in the garden or blown onto the garden from adjoining property. The first spray should be timed to when the spear-like new shoots have emerged from the ground, but before any new leaves have unfolded. This spray will also arrest active infections in those shoots which may have had tissues damaged by a late frost. To be effective, the spray should remain on the plant for at least twenty-four hours before a significant rain.

The second spray is applied ten to fourteen days after the first. This spraying should catch the leaves as they are unfolding as well as any late-appearing ground shoots. A phenological indication of the best time for this spray is when the wood violets are just beginning to bloom.

The third spray is then applied ten to fourteen days after the second, right before or just when the earliest varieties (like **Early Scout**) begin to bloom. A chemical recommendation for these three sprayings is a combination of **CAPTAN** (50% wettable powder, also called **Orthocide**) and **Benlate** (**Benomyl**). Full, label-recommended rates are applied for the first spraying, and also half the rate for the third spraying. If the season has been excessively rainy, use the full recommended rate for the third spraying as this type of weather favors fungus growth.

Always remember to follow the label recommendations, use ac-

curate application equipment, avoid having the chemical solutions touch your skin, and clean all equipment thoroughly after use. Of course, garden chemicals should be kept away from children and animals. Caution and common sense should always be practiced when spraying in one's garden.

Garden peony plants infected with peony rootknot nematode are best destroyed unless the infection is so minor that the plant's performance is not affected. New plants should always be purchased from reliable sources as these growers take great care to sell only clean, nematode-free rootstock. Once a particular garden area has rootknot nematodes, new peony plants should not be planted immediately into this area without a soil exchange. Breaking the nematode's life cycle may also be possible by leaving the area fallow for three to four years, or by raising another type of plant which the nematodes do not affect. It is documented that annual marigolds are a good natural nematode enemy and will help to clean the soil.

Tree peonies seem to be relatively free of major diseases and pest problems. Although some minor leaf problems may occur from time to time, a single cultural practice can keep plants healthy and vigorous. In early Spring, when one can easily examine the plants' branching structure, prune to thin out all the extra internal minor branches. This allows better air circulation within the base and center of the plant, and, in addition, directs the plants' available stored energy into its main flower-producing shoots. This cultural pruning should begin when the plants are five to six years old and should especially be continued as the plants attain maturity.

A selection of Peony literature subsequent to the publication of Alice Harding's *The Peony* in 1917 and *Peonies in the Little Garden* in 1923.

1. Nehrling, Arno and Irene. *Peonies, Outdoors and In*. New York: Hearthsides Press, Inc., 1960.
2. Wister, John C. editor. *The Peonies*. Washington D.C.: American Horticulture Society, 1962.
3. Stearn, William T., and Peter H. Davis. *Peonies of Greece*. Greece: The Goulandris Natural History Museum, 1984.
4. *Handbook of the Peony*. American Peony Society, 1986.
5. Kessenich, Greta M., editor. *Peonies 1976-1986*. American Peony Society, 1986.
6. Kessenich, Greta M., editor. *American Peony Society 75 Years*. American Peony Society, 1979.
7. Kessenich, Greta M., editor. *Peonies, Favorites of Greek Gods and Chinese Emperors*. The American Peony Society, 1976.
8. Boyd, James, editor. *Peonies*. American Peony Society, 1928.

A NOVICE EXHIBITOR

Robert Wise, Sidney, Ohio

Since 1972, when I first attended an American Peony Society National Flower Show, the desire to enter has gnawed at me. My instinct said 'go for it,' but my better judgment kept saying 'you don't have the varieties for experience to compete with the best in the country.'

This battle raged every three years when the show was held in Mansfield, Ohio, only three hours drive from my home near Sidney, Ohio. During these years, I gradually added more varieties, and moved certain ones to places where they grew and bloomed well. Some of the varieties I grew, which are mostly the older ones, were occasionally being placed in the Court of Honor at the National Shows.

So I was convinced the flowers were ready, but the technique for cutting, storing, transporting, and setting up the blooms for the show was lacking. By reading the quarterly Bulletin, these things were explained. Finally, in 1985, I was ready for the National Show which was to be held in Champaign, Illinois.

My wife, Helen, and I, visited there in 1977, when the show was cancelled because of the weather during May. I cut the blooms, bagged them and stored them in our old Crosley refrigerator in the basement. Three weeks before the show, I received a postcard stating that my high school class of 1955 was holding our 30-year class reunion the same weekend of the Show.

So, I rehearsed the events of the flower show by taking out the 40 or so blooms on Thursday and removing the bags, placing the stalks in water, and watched them open up. Only about 15 blooms opened up and maybe 8 or 9 were real nice. These blooms I took to the class reunion and made quite a hit with the people there.

But overall, I was disappointed, and glad I hadn't driven all the way to Illinois to enter the show. I tried to determine my mistakes, and the biggest was picking the buds too early. Another was trying to keep the early varieties more than three weeks without drying out.

My wife and five daughters encouraged me to enter in 1987, so my first blooms, DIANA PARKS, were cut around the first week in May. I decided to put them in water inside the refrigerator in hopes of keeping them for six weeks.

A couple of days later, I checked them and the water was frozen. I had turned the temperature control too far. Figuring they were ruined, I turned my attention to the other varieties. After cutting and bagging about 88 blooms from 25 varieties, the small refrigerator was stuffed with flowers, much to the displeasure of my three daughters still at home. They didn't have any place to keep their Pepsi, Mountain Dew, and Dr. Pepper cold.

The show was still ten days away. Still time to back out and keep

the flowers at home, but, no, I had to try it. Everything was falling into place; my confidence was rising, and my days off from work were Friday and Saturday. On Thursday night, I took the bagged blooms out of the refrigerator and put them in five-gallon buckets of cold water. Some of the stems didn't look good.

We arrived in Mansfield on Friday afternoon and I began putting the flowers in glass containers of water, and generally sorting out the best blooms discarding the lifeless ones. All that could be done was wait and hope they open to the uniformity of the garden. Of the 88 blooms taken to Mansfield, only 32 were entered in the show. For various reasons, the others either didn't open at all or were not suitable for Show purposes.

The other exhibitors were most helpful in sharing information and materials, and assisted by setting up the blooms for display. Saturday morning was a hectic time with everyone rushing around picking their best blooms, and getting across the courtyard into the showroom in time for the 11:30 a.m. judging. Now, for another 2 hours, there is nothing to do but wait for the Judges to select the best of each class.

After the judging was completed at 1:45 p.m., Helen and I were surprised to find 10 blue ribbons. In checking closer, one bottle of three blooms had one missing. A note on the entry tag stated that the Judges removed the flower and placed it in the Court of Honor. The prize winner was a variety called *Alstead*, a Japanese lactiflora, which I've had lots of success with.

Needless to say, I am very pleased with the events that weekend in Mansfield. My family was happy to see me enter the show and do well. The main point of this article is to encourage other Society members who have never entered the National Show to please give some serious consideration when the show comes to your part of the country. Don't be afraid to ask questions; there is always someone to help you out.

THE HOPKINS POST OFFICE AND PEONIES

Greta Kessenich

This was a year of big beautiful peony blooms, beginning with the tree peony the last of May; then came the hybrids, and the seasons of the lactifloras.

The Winter was mild, with no snow, which is highly unusual for this northern midwest country. Spring came three-to-four weeks early with the peony sending up their pink eyes, that eventually burst forth into large husky plants and blooms of grandeur. We were fortunate, as there was no late freeze and the mild weather continued.

One peony in the garden, *PINK MONARCH*, grew to over four feet with bloom stalks far above the foliage, with 30 large buds, making an all-over plant of five feet. The stems were strong, but to protect it I encircled the entire plant with a piece of six-foot wire fencing. The buds would sway back and forth in the wind but none were ever

broken. When it bloomed, the huge pink double blossoms filled the encasement that held it. In one of the last letters written to me by Mr. Auten, he told me of this peony and said to buy a root of it.

All plants were taller this year: Coral Sunset, Coral Supreme, Roselette, Sparkling Star, Pillow Talk, Annisquam, Cheddar Cheese, Kansas, Mary Brand, Brides Dream, and Dorothy J., to name a few.

There were two exceptional varieties that put on a dress show for the first time, in the garden. One is labeled Tischler seedling #90. It is an anemone with staminodes so full in the center that it is almost a double. The flower is a striking beauty with the deep center a very dark rose—almost red. This color radiates up each staminode, from the dark to the pale with the blend reaching the top of the tips, which are white. It truly is a burst of the rainbow in the blending of the rays. The guard petals are a deep pink; the plant was covered with bloom, just above the top of the foliage.

The other peony is one of Krekler's new varieties, named Greta. The plant was covered with deep purple, semi-double blooms, with golden stamens just peeping. It would be classed as a deep deep red, but that is not the color; it is a deep purple as we know the color purple—the same shade as my very favorite purple dress. With the dark green foliage, this variety is a gem, and was at its best this year.

With all these beautiful blooms, it was time for me to say "Thank You" to my many friends in the Hopkins Post Office. Over the many years, in my daily trek to the post office to mail letters, books and packages to you, the members of the post office staff have extended every courtesy, always a friendly greeting, smiles, and a cheery hello. Letters and packages are given every consideration, and when the destination is overseas, special postage is required as rates vary, but cheerfully, time is given to find some far-off country.

Mailing the Bulletins is quite different than just dropping them off in a letter box. They are all pre-sorted as to State and zip, secured in correctly-labeled packages with heavy rubber bands, and then put into mailbags and taken to the P.O. A cart full of these heavy mailbags are cheerfully received at the bulk station. Every courtesy is extended in helping, checking and weighing. In the Spring, always a question: 'When will the peonies bloom?'

The Bulletins are sent out immediately and you are receiving them on time, so again this year, my thanks to them was expressed in vases of peony blooms, starting with the hybrids, and on through the doubles. Blooms were placed at every station in the front office, in the executive office, and in the bulk mailing station. Not only did the peony blossoms say a silent 'thank you' and appreciation, but the many people that mail daily, also enjoyed the blooms.

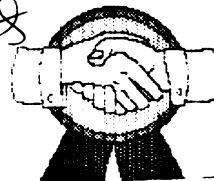
The following letter from the Postmaster, and the Certificate of Appreciation, was sent to me.

Certificate of Appreciation

PRESENTED TO MS. GRETTA M. KESSENICH
FOR HER GENEROSITY IN BRIGHTENING OUR
OFFICES WITH HER BEAUTIFUL FLOWERS.

Robert Scott *Ann Targers* *A. K.*
HOPKINS POSTAL EMPLOYEES

MAY 29, 1987



May 28, 1987

Ms. Gretta M. Kessenich
250 Interlachen Road
Hopkins, MN. 55343

Dear Gretta:

Just a note to let you know how much we at the Hopkins Post Office appreciate the beautiful peonies that you so generously share with us.

We feel you should be made aware of the continuous compliments on the size and beautiful colors of your flowers. The peonies have brightened up all areas in which they have been placed and have made the atmosphere much more cheerful.

The Hopkins Post Office thanks you again, and please know that we admire the patience and constant hard work that it must take to grow these beautiful flowers, you are truly gifted and thanks for sharing this gift with us.

Sincerely,

Robert Scott

Robert Scott, Postmaster
Hopkins Post Office
910 - 1st. St. So.
Hopkins, MN. 55343-9998

**THE 84TH ANNUAL MEETING
82ND ANNUAL EXHIBITION OF THE
AMERICAN PEONY SOCIETY**

June 12, 13, 14, 1987

Kingwood Center, Mansfield, Ohio

COURT OF HONOR

Grand Champion — HIGH NOON

Won by Carroll Spangler, Ft. Atkinson, Wisconsin

Best—Double white — ANN COUSINS — Marvin C. Karrels

Double blush — MADYLONE — C. F. Spangler

Double light pink — DINNERPLATE — Dr. Carl H. Klehm

Double dark pink — BLANCHE KING — Robert Schmidt

Double red — ORLANDO ROBERTS — Dr. Carl H. Klehm

Bomb—any color — MR. ED — Dr. Carl H. Klehm

Semi-double — MINNIE SHAYLOR — Joseph Glocka

Single — PINK PRINCESS — Dr. Carl H. Klehm

Japanese — COMMANCHE — Marvin Karrels

Best—Hybrid or species, single — ILLINI WARRIOR — Dr. Carl H. Klehm

Hybrid—semi-double — BUCKEYE BELLE — Dr. Carl H. Klehm

Hybrid—double — CAROL — C. H. Spangler

Special award, Japanese — ALSTEAD — Robert Wise

Tree peony, lutea — RENOWN — Dr. Carl H. Klehm

Itoh Hybrid — YELLOW EMPEROR — Marvin Karrels

DIVISION I. OPEN TO ALL EXHIBITORS

Class 101 — Twenty-five varieties, any color or type. One bloom in separate containers.

1ST WON BY DR. CARL H. KLEHM, BARRINGTON, ILLINOIS

Cheddar Cheese, Dolorodell, Mrs. Livingston Ferrand, Best Man, Jay Cee, Mrs. Franklin D. Roosevelt, Moonstone, Bowl of Cream, Coral Charm, Hawaii, Nice Gal, Old Faithful, Red Grace, Etched Salmon, Pink Lemonade, Miss America, Charlies White, White Cap, Alhambra, Renown, Golden Mandarin, Patriot, Prairie Moon, Krinkled White, Camellia.

2ND WON BY MARVIN C. KARRELS, MILWAUKEE, WISCONSIN

Nick Shaylor, Pink Hawaiian Coral, Orange Glory, Red Charm, Miss America, Old Faithful, Commando, Ramona Lins, Madylone, Gibraltar, Walter Mains, Cytherea, Princess Margaret, Paul Bunyan, Pink Derby, Carol, Comanche, Burma Ruby, Coral Charm, Yellow Emperor, Moon River, Prairie Moon, Coral Sunset, Annisquam, Madylone.

3RD WON BY C. F. SPANGLER, FORT ATKINSON, WISCONSIN

High Noon, Bowl of Cream, Vivid Rose, White Cap, Cytherea, Firebelle, Henry Bockstoce, Madylone, Carol, Thura Hires, Gibraltar, Dragons Nest, Sky Pilot, Renown, Dog Rose, Felix Crousse, Emma Klehm, Nippon Beauty, Burma Ruby, Raspberry Sundae, Etched Salmon, Hansina Brand, Ludovica, Dinner Plate, Miss America.

**HONORABLE MENTION — JOSEPH GLOCKA,
WEST ALLIS, WISCONSIN**

Mons Jules Elie, Walter Faxon, Snow Mountain, Golden Glow, Mabel Gore, Sarah Bernhardt, Hifalutin, Emma Klehm, Paula Fay, Sea Shell, Firebelle, Friendship, Imperial Red, Martha Bullock, Red Charm, Loren Franklin, Mary Nicholls, Mrs. Franklin D. Roosevelt, Paul M. Wild, Nick Shaylor, V. Berlyn Crockett, Victory, Raspberry Sundae, Firebelle.

Class 102 — Fifteen varieties, herbaceous only, any type or color

1ST WON BY DR. CARL KLEHM, SO. BARRINGTON, ILLINOIS

Miss America, Pink Parfait, Moonstone, Best Man, Elsa Sass, Pillow Talk, Coral Sunset, Myron Bronson, Coral Supreme, Sweet 16, Pink Princess, Dad, Etched Salmon, Red Charm, Nice Gal.

2ND WON BY FLOYD KIMBALL, STILLWATER, MINNESOTA

Campagna, Coral Charm, Cytherea, Diana Parks, Florence Bruss, Heide, Kansas, Marie Jacquin, Mildred Gardner, Moonstone, Nadia, Pico, Princess Margaret, Red Charm, Sea Shell.

3RD WON BY ROBERT SCHMIDT, BRECKSVILLE, OHIO

Dolorodell, Elsa Sass, Coral Supreme, Burma Ruby, Feather Top, Annie Bigger, Glory Hallelujah, Carolina Moon, Blaze, Miss Mary, Cytherea, Walter Mains, Paul Wilcox, First Lady, Nick Shaylor.

Class 103 — Ten varieties, herbaceous hybrids

1ST WON BY MARVIN KARRELS, MILWAUKEE, WISCONSIN

Coral Sunset, Athena, Prairie Moon, Carol, Old Faithful, Pink Hawaiian Coral, Walter Mains, Coral Charm, Robert W. Auten, Burma Ruby.

2ND WON BY DR. CARL KLEHM, SO. BARRINGTON, ILLINOIS

Crusader, Cytherea, Glowing Raspberry Rose, Etched Salmon, Red Grace, Camellia, Montezuma, Prairie Moon, Bright Knight, Old Faithful.

3RD WON BY JOSEPH GLOCKA, WEST ALLIS, WISCONSIN

Lovely Rose, Paula Fay, Black Monarch, Reward, Cytherea, Friendship, Illini Belle, Ann Zahller, Laura Magnuson, Red Charm.

Class 104 — Ten varieties, tree peonies, any type or color

1ST WON BY CARL KLEHM, SO. BARRINGTON, ILLINOIS

Alhambra, Holiday, Narcissus, Renown, Promethess, Chinese Dragon, Black Pirate, Coronel, Golden Vanitie, Golden Mandarin.

2ND WON BY DAVID REATH, VULCAN, MICHIGAN

Banquet, Black Pirate, Iphegenia, Rose Flame, Kronas, Age of Gold, Silver Sails, Thunderbolt, Themis, Gauguin.

3RD WON BY JOHN SIMKINS, OAKVILLE, ONTARIO, CANADA

D 255, Gratwick 798, Daffodil, Black Pirate, Renown, Angelette, Marchioness, M. 9922, Hesperus, Happy Memories.

Class 105 — Five varieties, Japanese type lactiflora

1ST WON BY CARL KLEHM, SO. BARRINGTON, ILLINOIS

Evelyn Tibbets, Westerner, Dorean, Cora Stubbs, Ray Payton.

Class 106 — Five varieties, single type lactiflora

1ST WON BY CARL KLEHM, SO. BARRINGTON, ILLINOIS

Krinkled White, Myron Bronson, Ivory Jewell, Mr. Thim, Pink Princess.

THREE BLOOMS, ONE VARIETY, LACTIFLORA ONLY, IN ONE CONTAINER

Class 110 Double white	1. Victory — Robert F. Schmidt 2. White Ivory — Dr. Carl H. Klehm 3. Mothers Choice — Dr. Carl H. Klehm H.M. — Elsa Sass — Dr. Carl H. Klehm
Class 111 Double blush	1. Moon River — Dr. Carl H. Klehm 2. Madylone — Robert F. Schmidt 3. Nancy Nicholls — Dr. Carl H. Klehm H.M. — Corrain Wersan — Dr. Carl H. Klehm
Class 112 Double lt. pink	1. Pillow Talk 2. My Pal Rudy [all Dr. Carl H. Klehm] 3. Hermione H.M. — Fairy's Petticoat
Class 113 Double dk. pink	1. Vivid Rose — Joseph Glocka 2. Glory Hallelujah — Dr. Carl H. Klehm 3. — H.M. — Edulis Supreme — Dr. Carl H. Klehm
Class 114 Double red	1. Felix Supreme — 2. Best Man [all Dr. Carl H. Klehm] 3. — H.M. — Kansas
Class 115 Semi-double white	1. Minnie Shaylor 2. — [all Dr. Carl H. Klehm] 3. Mrs. Euclid Snow H.M. — Miss America
Class 116	— no entries
Class 117 Semi-double red	1. Nice Gal 2. Hoosierland — [all Dr. Carl H. Klehm] 3. H.M. —
Class 118 Bomb	1. Honey Gold 2. — [all Dr. Carl H. Klehm] 3. Raspberry Sundae
Class 119 Japanese white or blush	2. — 2. Toro-no-maki — [all Dr. Carl H. Klehm] 3. Gold Standard
Class 120 Japanese pink	1. Golly 2. Tom Eckhardt — [all Dr. Carl H. Klehm] 3. Cora Stubb
Class 121 Japanese red	1. West Elkton 2. Barrington Belle — [All Dr. Carl H. Klehm] 3. Nellie Shaylor H.M. Ray Payton
Class 122 Single white or blush	1. Krinkled White 2. Star Dust — [all Dr. Carl H. Klehm] 3. H.M. —
Class 123 Single pink	1. Myron Bronson 2. Myron Bronson — [all Dr. Carl H. Klehm] 3. — H.M. Pink Princess

- Class 124**
Single red
1. —
 2. — [all Dr. Carl H. Klehm]
 3. **Miss Mary**
H.M. President Lincoln

ONE BLOOM LACTIFLORA ONLY

- Class 130**
Double white
1. **Gladys Hodson** — Marvin Karrels
 2. **Elsa Sass** — Robert Schmidt
 3. **Victory** — Robert Schmidt
H.M. — Mothers Choice — Carl Klehm
- Class 131**
Double blush
1. **Nick Shaylor** — Marvin Karrels
 2. **Moonstone** — Robert Schmidt
 3. **Moon River** — W. G. Sindt
H.M. Moon River — Carl Klehm
- Class 132**
Double lt. pink
1. **Truly Yours** — Robert Schmidt
 2. **Dolorodell** — Robert Schmidt
 3. **Pink Cameo** — W. G. Sindt
H.M. Mrs. Livingston Farrand — Joe Glocka
- Class 133**
Double dk. pink
1. **Gilbralter** — C. Spangler
 2. **Princess Margaret** — Frank Howell
 3. **Hallelujah** — Carl Klehm
H.M. Emma Klehm — W. G. Sindt
- Class 134**
Double red
1. **Douglas Brand** — W. G. Sindt
 2. **Felix Supreme** — Carl Klehm
 3. **Shawnee Chief** — Robert Schmidt
H.M. Kansas — Marvin Karrels
- Class 135**
Semi-double
White or blush
1. —
 2. **Miss America** — Carl Klehm
 3. **Zuzu** — Carl Klehm
H.M. Minnie Shaylor — Carl Klehm
- Class 136**
Class 137
Semi-double
Red
1. **Chippewa** — Frank Howell
 2. **Hoosierland** — Carl Klehm
 3. **Nice Gal** — Carl Klehm
- Class 138**
Class 139
Bomb pink
1. **Mr. Ed** — Carl Klehm
 1. **Margaret Mains** — Marvin Karrels
 2. **Sweet 16** — Carl Klehm
 3. **Angel Cheeks** — Robert Schmidt
- Class 140**
Class 141
Japanese white or blush
2. **Toro-no-maki** — Carl Klehm
- Class 142**
Japanese pink
1. **Cora Stubbs** — Carl Klehm
 2. **Cora Stubbs** — Carl Klehm
 3. **Gay Paree** — John Simkins
- Class 143**
Japanese red
1. **Nellie Saylor**
 2. **Barrington Belle** [all Carl H. Klehm]
 3. **White Cap**

Class 144
Single white
or blush

1. **Krinkled White** — Floyd Kimball
2. **Krinkled White** — Carl Klehm
3. **Krinkled White** — Carl Klehm

Class 145
Single pink

1. —
2. **Myron Bronson** — Carl Klehm
- H.M. May Apple** — Robert Schmidt

Class 146
Single red

1. **Gratis** — Carl Klehm

THREE BLOOMS, ONE VARIETY HERBACEOUS HYBRIDS OR SPECIES, IN ONE CONTAINER

Class 150
Double or semi-double — white, blush or yellow

1. **Prairie Moon** — Carl Klehm

Class 151
Double or semi-coral

1. **Coral Charm** — Floyd Kimball
2. **Etched Salmon** — Carl Klehm

Class 152
Double or semi-pink

1. **Cytherea** — Floyd Kimball
2. **Cytherea** — Reath

Class 153
Double or semi-red

1. **Old Faithful** — Marvin Karrels
2. **Carol** — Joe Glocka
3. **Buckeye Belle** — Carl Klehm

No Entries — 154 -155 -156 -157 -158

Class 159
Single red

1. **Bright Knight** — Carl Klehm
2. **Burma Ruby** — Frank Howell

Class 159A — no record as any entries

ONE BLOOM HERBACEOUS HYBRID OR SPECIES

Class 160
Double or semi-yellow

1. **Prairie Moon** — Carl Klehm
2. **Prairie Moon** — David Reath

Class 161 —

Class 162
Double or semi-coral

1. **Coral Charm** — Robert Schmidt
2. **Coral Charm** — Carl Klehm
3. **Coral Charm** — Carl Klehm

Class 163
Double or semi-pink

1. **Cytherea** — Marvin Karrels
2. **Cytherea** — David Reath
3. **Paula Fay** — Carl Klehm

Class 164
Double or semi-red

1. **Carol** — C. Spangler
2. **Old Faithful** — Carl Klehm
3. **Buckeye Belle** — Carl Klehm
- H.M. Red Charm** — Carl Klehm

Class 165
Japanese,
any color

1. **Walter Mains** — Robert Smith
2. Name not readable

Classes 166-167 — No entries

Class 168
Single coral

1. **Coral and Gold** [Carl Klehm]
2. **Salmon Surprise**

Class 169
Single pink

1. **Coralie** — W. G. Sindt
2. **Lovely Rose** — Robert Schmidt

Class 169A Single red	1. Red Alert — Robert Schmidt 2. Bright Knight — Carl Klehm 3. Illini Warrior — Robert Schmidt H.M. Red Romance — Robert Schmidt
Class 169B	1. Yellow Emperor — Marvin Karrels
THREE BLOOMS, ONE VARIETY, TREE PEONIES ONLY, IN ONE CONTAINER	
Class 175C	2. Holiday — Carl Klehm
Class 176A Single yellow	1. Golden Vanitie 2. Alhambra [all Carl Klehm] 3. Golden Bowl H.M. Golden Vanitie
Class 179B Semi-red double	1. Boreas — David Reath
Class 180A Dark red single	1. Renown 2. Renown [Carl Klehm]
Class 180B Dark red semi D.	3. Hephestos [David Reath]
Class 185B White	2. Haku Banarie — David Reath
Class 190C Lutea double, white to cream	2. Holiday — Carl Klehm
Class 191A Single yellow	1. Angelette — Carl Klehm 2. Angelette — Carl Klehm 3. Golden Vanitie — Carl Klehm
Class 191B Semi-double yellow	1. Age of Gold — David Reath 2. Golden Mandarin — Carl Klehm 3. Golden Mandarin — Carl Klehm H.M. Golden Bowl — Carl Klehm
Class 192A Blend, single	2. Exotic Era — David Reath 3. Marchioness — Carl Klehm H.M. Savage Splendor — Carl Klehm
Class 192B Blend Semi-double	1. Regent — David Reath
Class 194A Lutea red single	1. Chinese Dragon — Carl Klehm
Class 194C	1. Vesuvian — David Reath
Class 195A Dark red single	1. Vesuvian — Carl Klehm
Class 195B Dark red semi-double	1. Black Pirate — David Reath 2. Hesperus — David Reath
Class 195C Dark red double	1. Black Panther — David Reath
Class 196C European tree peony	2. Souvenir de Maxime Cornu — John Simkins 3. Souvenir de Maxime Cornu — Carl Klehm

DIVISION III. NOVICE

- Class 301** Five varieties any type or color
1. Names not recorded by clerk — Robert Wise

THREE BLOOMS, ONE VARIETY, IN ONE CONTAINER

- Class 305** 2. *Edulis Superba* — Robert Wise

Double, any color

- Class 307** 1. *Alstead* — Robert Wise

Japanese, any color

- Class 309** 1. *Diana Parks* — Robert Wise

Hybrid, any color

ONE BLOOM LACTIFLORA, UNLESS OTHERWISE STATED

- Class 315** 1. *Nick Shaylor*

Double white 2. *Alma Hanson* [all Robert Wise]

or blush 3. *Susan B. White*

- Class 317** 1. *Karl Rosenfeld* — Robert Wise

Double red

- Class 318** 1. *Minnie Shaylor* — Robert Wise

Semi-double, any color

- Class 319** 1. *Mons Jules Elie* — Robert Wise

Bomb

- Class 320** 1. *Alstead* — Robert Wise

Japanese

- Class 322** 1. *Diana Parks* — Robert Wise

Hybrid any color

DIVISION IV. SEEDLINGS AND NEW VARIETIES

- Class 401** 79-J-3 Light yellow hybrid, single — Certificate of Merit
— David Reath

83-14 Semi-double hybrid, maroon red. Honorable Men-
tion — David Reath

Judges — Marvin Karrels, Gus Sindt

DIVISION V. SPECIAL ENTRIES

- Class 502** Visitors from the greatest distance

1. Floyd Kimball, Stillwater, Minnesota

- Class 503** Multiple bloom

1. *Jay Cee* — Carl Klehm

2. *Nick Shaylor* — Carl Klehm

3. *Ethel Mars* — Carl Klehm

H.M. — Robert Wise

- Class 505** North Dakota Memorial Award — Carl Klehm

1. *Myron Bronson*, *Barrington Belle*, *Miss America*, *Din-
ner Plate*

DIVISION VII. ARTISTIC

GRAND CHAMPION — Betty McKinney, Shelby, Ohio — *A Day At
Kingwood Center*

RESERVE CHAMPION — Betty McKinney — *A Hike Through The Woods*



**Poster and Inset—HIGH NOON—Grand Champion
Photograph, Thomas Eubanks, Sr.
Artistic Grand Champion and Court of Honor—Edward Lee Michau**

TISSUE CULTURE AND EMBRYOID FORMATION IN *Paeonia lactiflora* PALL.

Jih-Jing, Julie A. Thomas, and Martin M. Meyer, Jr., Department of Horticulture, University of Illinois, 1107 Dorner Dr., Urbana, IL 61801

[¹ Present Address, Department of Biology, Box 1137, Washington University, St. Louis, MO 63167]

[² Present Address, United Agriseeds, 103 Tomaras Ave., Savoy, IL 61874]

The tissue culture or micropropagation of the herbaceous peony can be approached by two methods. In the first method, a shoot cultured *in vitro* can be made to proliferate several axillary shoots which can be recultured to form more shoots. Unfortunately, the axillary shoots of herbaceous peony are borne underground as dormant eyes, which cause many problems with this method. In the second method, tissues of flowers, stems, leaves or roots can be made by use of growth regulators to produce callus (undifferentiated tissue), which can then be induced to form somatic (asexual) embryos. These embryos can then be germinated and grown and will resemble the original plant. This second method appears more promising for the clonal micropropagation of herbaceous peonies.

Meyer (10) has cultured embryos of herbaceous peonies *in vitro* and obtained plants. He has also induced callus from flower buds and roots, but this callus did not differentiate shoots, roots or embryos (11). Embryos of tree peony were cultured into callus by Demoise (1), but regeneration did not take place. In the following studies, efforts were made to induce asexual embryogenesis from cultured zygotic (sexual) embryos cultures or callus derived from these to develop a system to be used to clone commercial varieties of herbaceous peonies.

Open-pollinated seeds of *Paeonia lactiflora* Pall. cv. Sea Shell, an herbaceous peony, were collected from Klehm's Nursery, Champaign, IL, in September. Seeds were surface sterilized by soaking in 0.5% NaOCl (10% Clorox) and 0.1% Tween 20 for 20 minutes. Seeds were air-dried at 26°C (80°F) for 24 hours and stored at 4°C (38°F) until needed. The rudimentary embryos were extracted from the seed by cutting it in half and removing the portion of the endosperm containing the embryo from the seed coat (10). This half was surface-sterilized in 0.5% NaOCl and 0.1% Tween 20 for 15 minutes and rinsed with sterile water. The embryos were removed by sterile technique in a laminar flow hood and cultured in 25 mm (1 inch) test tubes at 26°C under cool white fluorescent lights, 300 f.c., with 18 hour photoperiod. A modified Linsmaier and Skoog (9,10) (LS) medium was used for embryo and callus cultures and contained the following organic components per liter: sucrose-40g, inositol-0.1g, casein hydrolysate-0.5g,

thiamine HC1-0.4mg, and Difco Bacto agar-7g. The KNO_3 was routinely doubled to 3800 mg/liter as suggested by Lin (8). All of the media were adjusted to pH 5.8 and 20 ml was added to each tube. Tubes with media were steam sterilized at 15 psi at 121°C for 15 minutes in an autoclave.

Callus cultures were obtained from the excised embryos by the addition of growth regulators to the medium. A 4x4 factorial arrangement of Naphthaleneacetic acid (NAA) 0, 0.5, 2.5, 12.5 mg/liter and N-(3-methyl-2-butenyl)-1H-purin-6-amine (2iP) 0, 0.4, 2, 10 mg/liter added to the LS medium caused the embryos to callus in some instances. Growth ratings were based on size of callus tissues produced after 8 weeks in culture (see Table 1). Callus tissues derived from cultured embryos were subcultured at six-week intervals. A 4x4 factorial arrangement of N-(2-furanylmethyl)-1H-purin-6-amine (kinetin) and Indoleacetic acid (IAA) both at 0, 0.5, 1.0, 2.0 mg/liter was tried on this callus in addition to 2iP and NAA.

Additional embryos were excised and cultured on growth regulators free LS medium with various concentrations of sucrose and NH_4NO_3 (Table 2) to stimulate direct embryogenesis from the original embryo. Embryos were also cultured *in vitro* until roots were 3 cm long and then exposed to 1°C for 4 weeks to overcome epicotyl dormancy.

Thin sections for microscopic observations were made of embryos from seeds and those derived by tissue culture (somatic embryos). Embryos and somatic embryos were fixed for 24 hours in FAA (formalin:acetic acid:ethanol). Tertiary butyl alcohol was used to dehydrate the samples. Samples were embedded in Paraplast (Monoject Scientific, St. Louis, Mo.) at 56°C. Embedded embryos and somatic embryos were cut into 10 μm thick sections on a microtome and stained with Safranin 0 in 50% ethanol and Fast Green in 95% ethanol. Sections were examined under a microscope and photographs were taken.

Callus was easily induced from excised peony embryos on modified LS medium. Callus initiation was slow and was not apparent until 4 weeks of culture, but growth of the induced callus was rapid depending on the concentration of growth regulator. The growth of callus was visually estimated and the growth ratings are shown in Table 1. Both NAA and 2iP were needed for callus induction and growth. The best combination was 2.5 mg/liter NAA and 0.4 mg/liter 2iP. Higher concentrations of NAA and 2iP prevented the formation of callus and eventually killed the embryos.

When the callus was subcultured, IAA and kinetin in the medium were detrimental to callus growth. Callus subcultured on a medium with NAA and 2iP started proliferating more callus after a 20-day lag period. Callus tissue grew the most vigorously on a modified LS medium with 0.5 mg/liter NAA and 5 mg/liter 2iP. Roots were ob-

served to form from the callus in medium with NAA and 2iP, but no buds were initiated even at 5 mg/liter 2iP. If the callus was cultured on 0.5 mg/liter NAA without 2iP a few embryo-like structures would develop on the surface of the callus (Fig. 1). This was found to be true even if the callus was subcultured three times before the 2iP was removed from the medium. Once the embryo-like structures started on the callus they continued to be initiated even if subcultured to a medium without NAA. These somatic embryos followed stages similar to sexual embryogenesis of globular, heart, and torpedo stages. When these somatic embryos were separated and transferred to a medium without growth regulators the cotyledons expanded, but the epicotyl failed to develop even after a cold treatment.

Somatic embryos were also initiated directly on the surface of seed embryo cotyledons *in vitro* when cultured on modified LS medium for 9-11 weeks (Fig. 2A). If 8-10 week-old cultured embryos were cold treated to break epicotyl dormancy (necessary for germination), somatic embryo formation was completely inhibited. The somatic embryos, which formed on the non cold treated embryos, seemed to arise spontaneously on about 30% of the seed embryos cultured and growth regulators were not required for this initiation. When sucrose concentration was lowered in the medium, a direct reduction resulted in the number of seed embryos forming somatic embryos (Table 2). When the NH_4NO_3 concentration was doubled in the LS medium, there was a slight increase in the number of embryos forming somatic embryos; however, half the concentration of this compound in the medium caused a marked reduction in somatic embryo production (Table 2). Embryos forming somatic embryos appeared similar regardless of the sucrose or NH_4NO_3 concentration. Roots occasionally developed on somatic embryos which were separated and placed on fresh medium, but germination would not continue regardless of further treatment (Fig. 2B).

The initiation of the somatic embryos on the cotyledons was not synchronous, and all stages of development could be observed in a single culture (Figs. 2A, 3A). When the cotyledons developing somatic embryos were sectioned and examined microscopically, the somatic embryos appeared to arise from the epidermis or just below it in some instances (Fig. 3A). Somatic embryos were often formed in closely packed groups and individuals were difficult to isolate (Fig. 3A). Several of these somatic embryos were successfully isolated and cultured, but failed to germinate as normal embryos. Thus, epicotyls did not form on somatic embryos both from cotyledons and callus cultures. Cold treatment, again, did not stimulate shoot growth. When these somatic embryos were compared histologically (Fig. 3B) to excised embryos (Fig. 3C), the epicotyl region of the excised embryo was more structured than the somatically developed somatic embryo.

Somatic embryos were successfully induced from either embryo or callus cultures in *Paeonia lactiflora*. The cytokinin, 2iP, and the auxin,

NAA, were needed to stimulate callus initiation from immature peony embryos. The auxin, NAA was needed for embryogenesis in peony callus. The induction of somatic embryo formation from callus tissue was inhibited by 2iP. The cytokinins, kinetin and 6-benzyladenine, also inhibited asexual embryogenesis in 'Shamoutii' orange (4). Asexual or somatic embryos were observed on 'Seyval' French grape callus tissues when they were subcultured onto media containing NAA (7) which is similar to results found in these experiments with the peony.

When the epicotyl dormancy of a cultured peony embryo was satisfied no somatic embryos were formed. In *Ilex aquifolium* (English holly), somatic embryos were initiated only on cotyledons of seedlings in which the shoot failed to develop (3). A similar friendship was observed earlier in *Biota orientalis* (Oriental arbor-vitae) (6). Peony embryos extracted and cultured *in vitro* behaved in the same manner, since somatic embryos were only induced on the cotyledon if the epicotyl was still dormant. This implies an antagonism between shoot growth and somatic embryo formation. Some compounds may be present in the embryo which inhibit shoot growth, but enhance the induction of somatic embryos.

The NH_4^+ ion appears necessary for somatic embryo induction on dormant cultured peony embryos and this requirement is in agreement with work on other plants (2). A decrease in sucrose concentration in the LS medium used in these studies gave a concomitant decrease in the number of cultured embryos forming somatic embryos which agrees with the review of other species by Sharp et al. (12). Further work to see how these two important media components relate would be valuable.

The somatic embryos which develop both from callus and on the surface of cultured embryos appear normal, but when attempts were made to germinate these, it was clear that their development was arrested in some manner. When sections of somatic embryos were compared to normal extracted rudimentary embryos, a difference in the epicotyl region was noted. The embryos had a flat apical meristem between the cotyledons; whereas, the somatic embryos had an area of meristematic cells but had no defined structure. These can be referred to as arrested somatic embryos (12) and further work is needed to obtain either more normal development or germination after excision to have *in vitro* embryogenesis.

ACKNOWLEDGMENTS

These studies were part of Project No. 65-364 of the Department of Horticulture, Agricultural Experiment Station, College of Agriculture, University of Illinois at Urbana-Champaign, and the Master of Science Theses of the first two authors. The research presented in this paper was also supported in part by the Klehm Nursery.

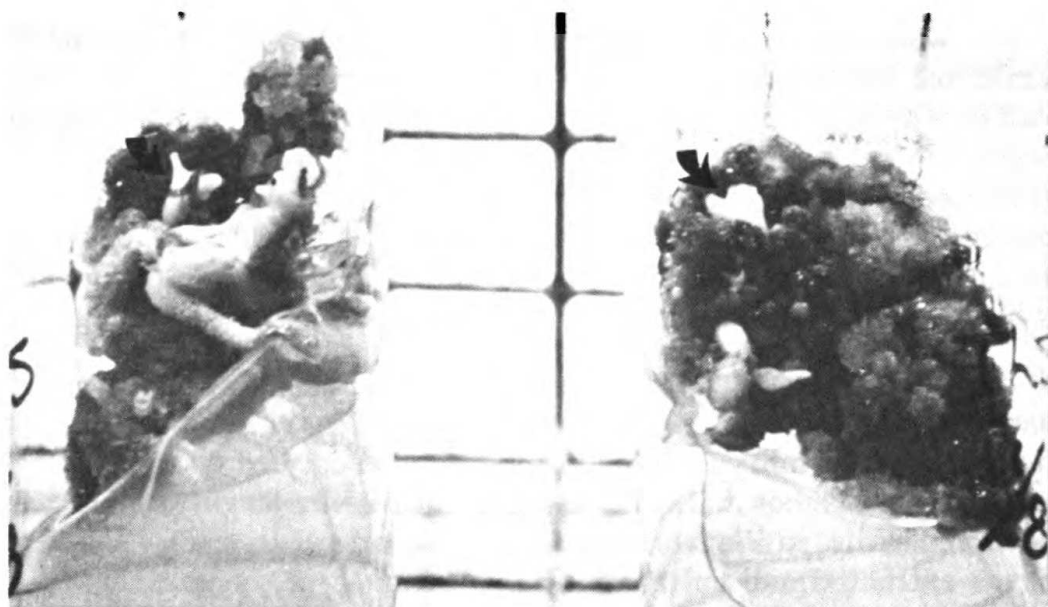


Fig. 1. Somatic embryos developed on callus tissue cultured on LS with 0.5 mg/liter NAA, cotyledons would sometimes expand when attached to parent tissues, but no further germination (2X).

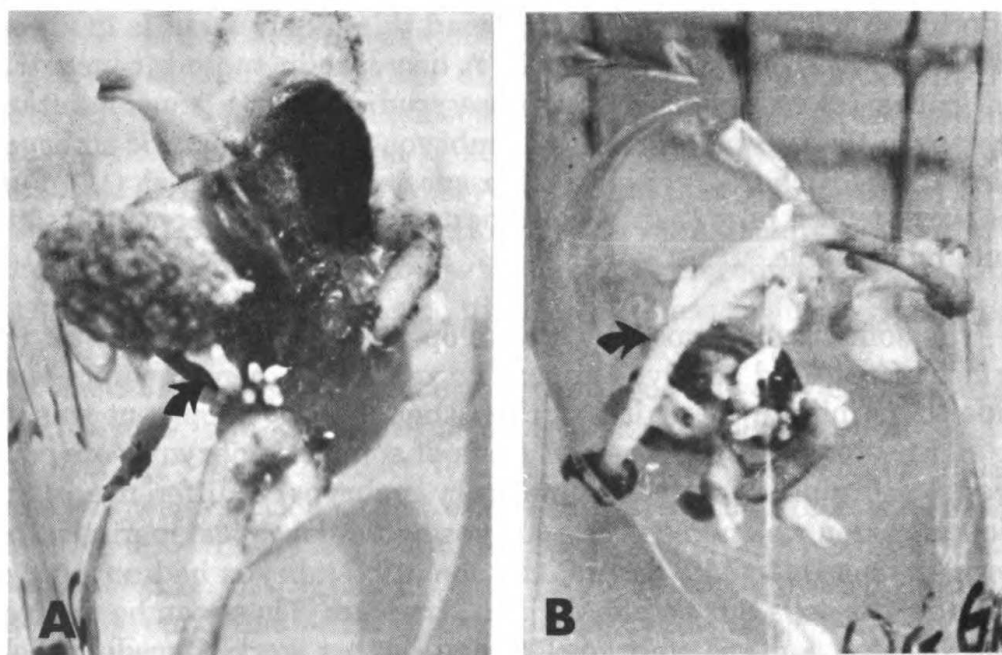


Fig. 2. Somatic embryos initiated directly from cultured embryos on LS without growth regulators (A) different stages of embryo development on original excised embryo (B) somatic embryos isolated would develop roots but shoot development was inhibited even with a cold treatment (2X).

Table 1. Growth ratings for callus induction of peony embryos on LS medium with a factorial combination of NAA and 2iP.

NAA	2iP mg/liter			
	0	0.4	2.0	10.0
mg/liter (Mean growth rating of 10 calli ^a)				
0	0.0	0.5	0.3	0.0
0.5	0.6	3.5	2.5	0.0
2.5	0.6	3.8	3.0	0.0
12.5	0.0	0.5	0.6	0.0

^aCallus formation from the embryos was scored from 0 to 4 as follows:

- 0 = no callus formation,
- 1 = callus mass covering 25% of the embryo,
- 2 = callus mass covering 50-75% of the embryo,
- 3 = callus mass covering 80-90% of the embryo,
- 4 = massive callus covering all of the embryo.

Table 2. Excised embryos forming somatic embryos on LS medium containing various concentrations of sucrose and NH_4NO_3 .

Compound	Somatic Embryos Formed ^a
Sucrose g/liter	
6	0
10	10.5
20	25.5
40	40.0
NH_4NO_3 mg/liter	
825	6.6
1650	35.5
3300	45.0

^aThe percent of 20 replicates having somatic embryos formed on cultured embryos without growth regulators.

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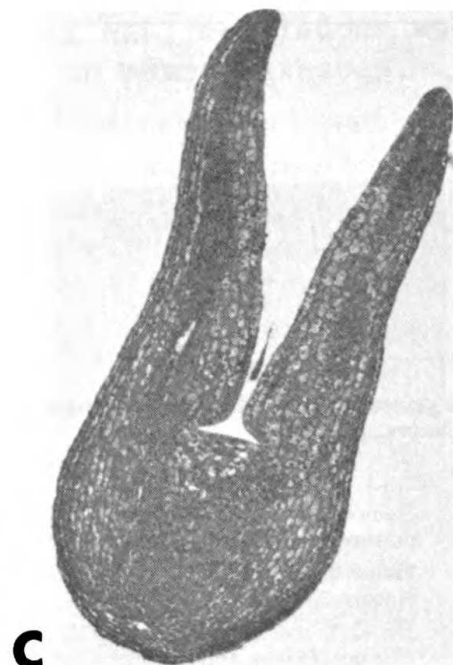
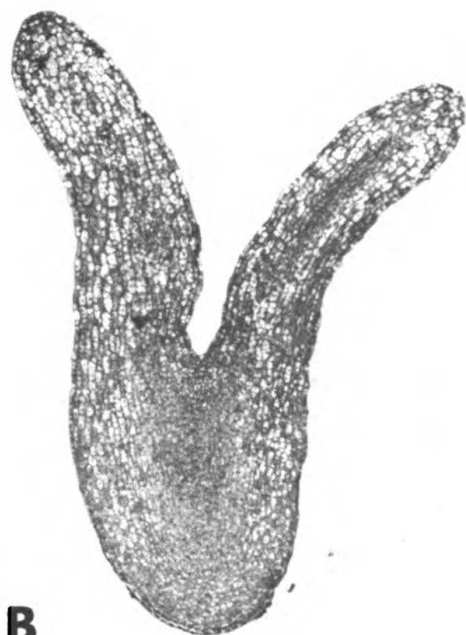
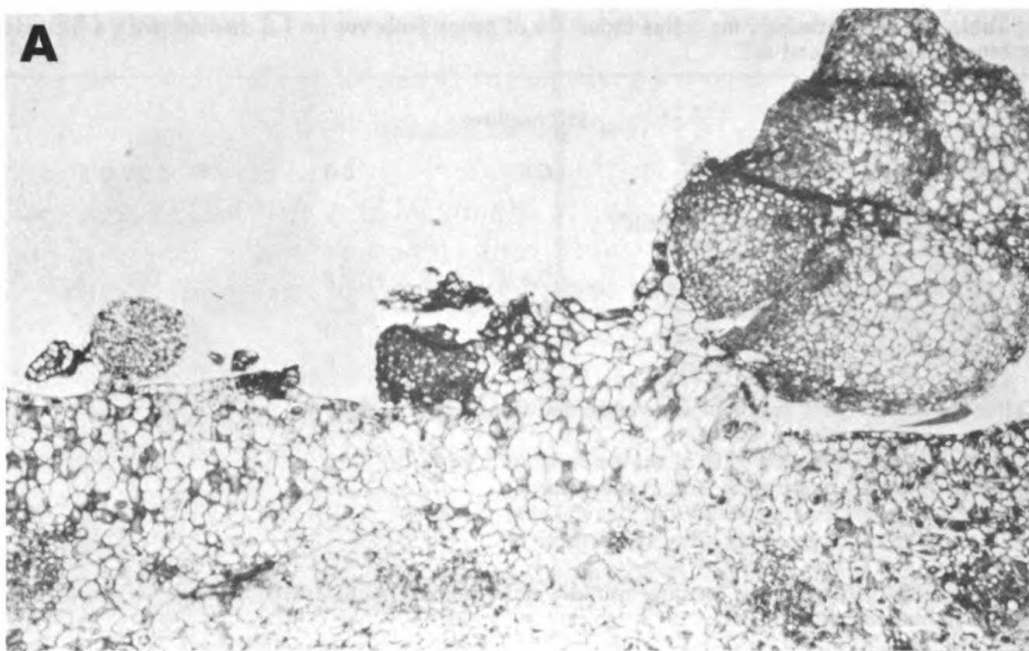


Fig. 3. Microscopic examination of somatic embryo development directly from cultured seed embryos.
(A) somatic embryos initiating from surface of the cotyledon (45X) **(B)** separated somatic embryo (30X)
(C) zygotic embryo excised from seed (40X).

PEONIES: A PERPETUALLY PRETTY BLOOM

Betty Frankel, Detroit Free Press, May 27, 1987

[Permission given for reprint]

Peonies—or pineys as they were called by the old-timers in upstate New York where I grew up—were Memorial Day flowers. People took bouquets of the huge fragrant pink blooms to the cemetery on Memorial Day and I always took an armload of lush pink peonies to my teacher at the end of May.

That is, I took them to my teacher until the year I dug up and transplanted the half-dozen big plants that had been growing in our yard for several generations. They survived the chopping and tugging, the stuffing into small holes hacked into poor soil close to the garage wall—but they never bloomed again. I never knew what went wrong until many years later. Eventually, I learned that peonies—which can live for 50 years or more if left alone—resent being moved. Transplanting, if absolutely necessary, is best done in early Fall. A large, deep hole filled with compost-enriched soil is required. And most importantly, I learned the plants must be set so the crown of the plant from which the buds sprout is only one to two inches below soil level. If deeper, plants won't bloom.

It wasn't until years later that I learned that the big pink fragrant Memorial Day peony wasn't the only peony. There are deep crimson red peonies and snow white peonies, and just about every shade in-between. There are peonies with a single row of petals around a puff of yellow stamens, as well as big many-petaled double peonies.

However, it wasn't until I saw peony beds in bloom at the Congregational Church of Birmingham, located in Bloomfield Hills, that I gained an appreciation for the range of peony possibilities. According to Harris Olson, the church member who planted the beds about 10 years ago, there are more than 150 varieties, including approximately 100 herbaceous peonies and 50 tree peonies.

Herbaceous peonies are the type most people know. The tops die each Winter but the roots live and produce new sprouts each Spring.

Tree peonies are woody shrubs. The woody branches are bare in Winter and are clothed anew each Spring with beautiful, deeply cut blue-green leaves.

Olson says the bloom season in the church beds begins with a herbaceous peony called a fern-leaf peony, which has finely-cut lacy leaves in a mound just under two feet in height. Lovely red flowers have a single row of petals surrounding a center of short gold stamens.

Most herbaceous peonies bloom somewhat later, after tree peonies, which have large flowers and petals with an exquisite silken sheen. Colors range from pure snow white to deep black-reds and include clear butter yellows and delicate peach, pink and melon tones. There are single, semi-double, and double forms. Olson says his

favorite is a blend of red and melon tones.

About a week or two after tree peonies bloom, most herbaceous peonies begin to open. Olson says there are four distinct types: single, semi-double, double, and Japanese. One of the first to open every year is a double variety called Red Charm with eye-catching deep red blooms with ruffled petals on 30-inch plants. Olson says this popular variety is normally in bloom the first week in June, although this year peonies, as well as most other flowers, are blooming a week or two earlier than normal.

Paula Fay, another early variety, has semi-double blooms with waxy, deep pink petals surrounding a fringed golden center. Plants grow three feet tall and have handsome dark green foliage. Cytherea, a mid-season variety, has semi-double pale pink blooms. Bu-Te, a Japanese type, has spectacular blooms with vivid red outer petals surrounding a large central puff of modified stamens, a typical Japanese peony form.

In addition to these, which Olson purchased, there are peonies in the garden that Olson has grown from seeds on the garden plants. He says it takes two years for seeds to germinate and about five years for the seedlings to reach blooming size. Many of the seedlings are as beautiful as the plants from which they came, and many have charming, single-type flowers.

Olson, 65, a retired salesman who lives in Birmingham, says the nicest thing about the church's spectacular peony garden is that it doesn't require any work. "I never have to replant the bed. Unlike iris that need dividing every few years, and daylilies that need dividing every four or five years, peonies shouldn't be disturbed. They can last 50 years," he says. "Peonies mainly want sunshine, rich soil and good drainage," Olson adds.

Here are Olson's tips for peony planting and care:

- Plant in September.
- Dig a bushel-basket-sized hole and fill it with soil mixed with a generous amount of peat moss or compost and a handful of bonemeal.
- Make a small hole in the prepared soil for the tiny piece of root you will be planting. It may be no larger than a large thumb, but it should have two or three eyes, or buds, on it.
- Set the root so the crown where the eyes are located is one inch below soil level. Use a ruler and measure.
- If plants are growing in pots, remove them but don't disturb the earth ball around roots. Set it at the same level at which it had been growing.
- After planting, hill extra soil over the plant to prevent frost-heaving during the first winter before roots are well established. Remove the surplus soil in Spring. Do this hilling only for the first Winter.

● Botrytis blight is the most serious peony disease. This fungus can cause blackening and decay of leaves and flowers. To prevent damage on herbaceous peonies, spray soil and emerging shoots in early Spring with Bordeaux mixture or Benomyl. To protect tree peonies, spray soil and bare branches in early Spring before leaves come out.

● Work a handful of bonemeal into the soil around each plant after it blooms.

● Mulch the bed with wood chips to cut down on weeding and conserve moisture.

● Water during prolonged dry spells.

● In Fall, cut off tops of herbaceous peonies at ground level. Burn or put in the trash. Remove fallen foliage from around tree peonies. Good cleanup helps prevent diseases.

1987 CONVENTION SEMINAR

L. J. Dewey

The tradition of scheduling a seminar during the annual American Peony Society Convention and Exhibition seems to be well established now. It is a tradition which, surely, a number of members want to see continued for years to come. The seminars present an opportunity for members to pick up tips on propagation methods, breeding techniques, plant characteristics of both hybrids and species, cultural practices, coping with diseases, and a host of other topics. The informality with which the seminars are conducted encourages audience participation so that there can be an exchange of ideas from which everyone benefits.

This tradition was ably carried on Saturday afternoon at the 1987 Convention in Mansfield, Ohio, when Chris Laning, one of the seminar veterans, gave a slide presentation in one of the cool basement rooms of Kingwood Hall. Coping with an erratic on-again, off-again projector, Chris, with his usual sense of humor, showed some slides of peony specimens growing in his garden. There were shots of the herbaceous tetraploids, and a discussion of their value in a peony breeding program. Chris has a sizable collection of Itoh hybrids and showed examples of the traditional yellows, as well as oddities with their strap-like petals from crosses between *suffruticosa* and herbaceous varieties. From the selection of his seedlings which he showed, the flowers on the Japanese *suffruticosa* seedlings, grown from seed collected by T. Domoto, were especially impressive. It may be that a garden of these seedlings would be as spectacular as one planted with named Japanese varieties, thus avoiding the frustrations of mislabeled plants. There were also slides of some of the species with a few words on the values of preserving these plants in our gardens for breeding purposes as well as, in some cases, for their intrinsic worth as garden specimens.

The speakers and convention planners should be congratulated for arranging these stimulating seminars, and more members should be encouraged not to miss them at future conventions.

THE ANNUAL MEETING AND BANQUET

Kingwood Center, Mansfield, Ohio, June 13, 1987.

The Annual Meeting and Banquet was held in the Mansion, on the grounds of Kingwood Center, Mansfield, Ohio. A buffet banquet was enjoyed after which Vice-President, Dr. Kent Crossley, called the meeting to order. The Invocation was delivered by Chris Laning. Mr. William Collins of Kingwood, welcomed the members of the Society. Dr. Crossley then asked that every member introduce himself, and give the name of their State.

The first order of business was for the election of Board members as the present 1987 members had served their three-year term. Since no adverse communication had been received from these members, the names were read for re-election, namely: Irwin Ewing, John E. Simkins, Allen J. Wild, Frank Howell, Peter C. Laning and W. G. Sindt. All were elected unanimously.

The financial report had been passed to all members. Mr. Karrels had audited the Treasurer's accounts and records, and was called on at this time to give his report. He stated that all monies were accounted for and duly recorded, and the financial statement was correct. The financial report was unanimously accepted.

At this time, the Court of Honor flowers, and their exhibitors, were read to the members. Dr. Crossley then called for any new business or any old business that should be brought up at this time. There being none, the meeting was closed.

At this time, Mrs. Lois Klehm was called to take charge of the Auction. Auctioneering was nothing new to Mrs. Klehm and neither were peonies. She has personally grown peonies, and has been associated with them all these years.

This occasion is always enjoyed by those present, and she gave added pleasure in presenting all roots and plants in a very skillful manner. We all thank you, Mrs. Klehm.

We also thank the many donors for the peony roots and plants. Every one was sold, and all monies went into the treasury of the American Peony Society.

Greta M. Kessenich, Secretary

MEETING OF THE BOARD OF DIRECTORS

Kingwood Center, Mansfield, Ohio, June 14, 1987

Board of Directors meeting held at the Gate House at Kingwood Center, Mansfield, Ohio, 9:00 a.m.

Board of Directors present were: Marvin Karrels—Wisconsin, Edward Lee Michau—Kansas, W. G. Sindt—Minnesota, Irvin Ewing,—Michigan, Joe Glocka—Wisconsin, Robert Schmidt—Ohio,

Maynard Dewey—New York, John Simkins—Ontario, Canada, Chris Laning—Michigan, Dr. Kent Crossley—Minnesota, and Greta Kessenich, Secretary—Minnesota.

The first order of business was to elect Officers for the following year. Motion was made and seconded that the present officers be re-elected for 1988 . . . Don Hollingsworth—President, Dr. Kent Crossley—Vice-President, Greta Kessenich—Secretary/Treasurer.

A discussion followed for Convention sites for the following years:

1988—Chicago Botanical Gardens, (*date to be announced later*).

1989—[tentative]—Janesville, Wisconsin

1990—Kingwood Center, Mansfield, Ohio — June 8-9-10

1991—[tentative]—Royal Botanical Garden, Hamilton, Ontario, Canada

The next order of business was the selection of the Gold Medal peony for 1988. The peony NORMA VOLZ received the prestigious honor. Peonies that are continuing to be under consideration are: ROSELETTE, MOON RIVER, HANA KISOI, BLACK PIRATE, HIGH NOON, SEA SHELL, SHINTENCHI with peony AMERICA added to the list.

A nominating committee was appointed for the ensuing year. It was agreed that this continuing committee should always be: the President, retiring President, and the Secretary. A letter is to go to the Directors whose three-year term is expiring and ask if they would like to serve another three-year term. The list of nominees will be published in the Bulletin. Nominations are open from the floor at the annual business meeting.

It was approved unanimously that a full-colored American tree peony book be published. Work will begin on the book immediately. Mr. Hubert Fisher, a member of the American Peony Society for many years, left an endowment to the Society. This endowment will be used as a memorial to him, in the publishing of this book.

A motion was made and approved to explore and obtain information regarding the reprinting of the book, *Peonies*, John Wister, Editor. It was approved that the book be reprinted.

In the show schedule, Classes 504 and 505 will be combined as one Class 504. It is known as the North Dakota Memorial Class. It has been changed from previous scheduling to the present, exhibiting five full doubles, named varieties, any color.

An award will be given in this Class of the most recent gold medal peony to the first-place winner.

Vice president, Dr. Kent Crossley, asked if there was any old business to be discussed; also any new business. There being none, the meeting was adjourned at 11:00 a.m.

Greta Kessenich, Secretary

REPORTING 1986 / 1987

With the September Bulletin, 56 issues have been mailed to you from this office. The responsibility of the Bulletin is a serious undertaking. We need your support in the way of contributions of articles covering different experiences you may have encountered in the growing of peonies. The results obtained from various cultural methods, successes you may have attained with your crossing of varieties, your favorite peonies, description of them and how they grow in your climate, will always be of interest. The Bulletin is open to every member, and your experience with the peony may be of value to others.

In a year's time, there are always some letters asking just what benefits will be received if they become a member of our Society. That question can best be answered by the rules and regulations in the Articles of Incorporation written by our founding fathers.

This Society was formed to increase the general interest in the cultivation and use of the peony, increase its use as a decorative flower, and to bring about a more thorough understanding between those interested in its culture, to properly supervise the nomenclature of the different varieties and kinds of peonies, and to stimulate the growing and introduction of improved seedlings and crosses of such flowers.

Those rules and regulations have been followed for 84 years and it is time we look at the results. Someone somewhere grew your peony from a seed, and what beautiful creations we have, thousands of them with proper and correct names. It took a group of people working together to do all this, dedicated people that tried and tried to achieve, and they did. Just look at the different varieties, new colors, and kinds, the new crosses, methods of growing, seed sowing, grafting, the tree peony becoming so popular in the American gardens, and many other accomplishments. Informative books have been written. Two nomenclature books are available with accurate information bringing up-to-date all recent introductions of peonies, and a Bulletin four times a year.

The financial report will relate that we are a Society in good standing, with all bills paid. It was necessary to have the last edition of the *Handbook of the Peony* reprinted this year. This is a very popular book as it contains information that is of benefit to all. The various articles in this Handbook were written by members that excel in their particular field. We have had cost increases in the printing of the Bulletin, and postage continues its upward spiral. Thank you for sending in your membership dues, which makes it possible to meet all commitments.

Greta M. Kessenich

FINANCIAL STATEMENT

June 1, 1986 - June 1, 1987

Balance on hand, June 1, 1986 \$53,370.38

Receipts:

Membership Dues	\$6,910.18
Advertising	352.50
Rent: Colored Slides	60.00
A.P.S. Auction	1,913.78
Registration Nomenclature	35.00
Contributions	165.98

9,437.44

Publications:

Bulletins	30.50
Handbooks	689.70
"The Peonies"	506.25
History of Peonies and their Originations	396.00
Book A.P.S. "75 Years"	255.00
Book, Peonies 1976-1986	690.00

2,567.45

Interest on Savings 4,511.10

Total Receipts \$16,515.99

Hubert Fisher Endowment Fund 6,000.00

\$75,886.37

Disbursements:

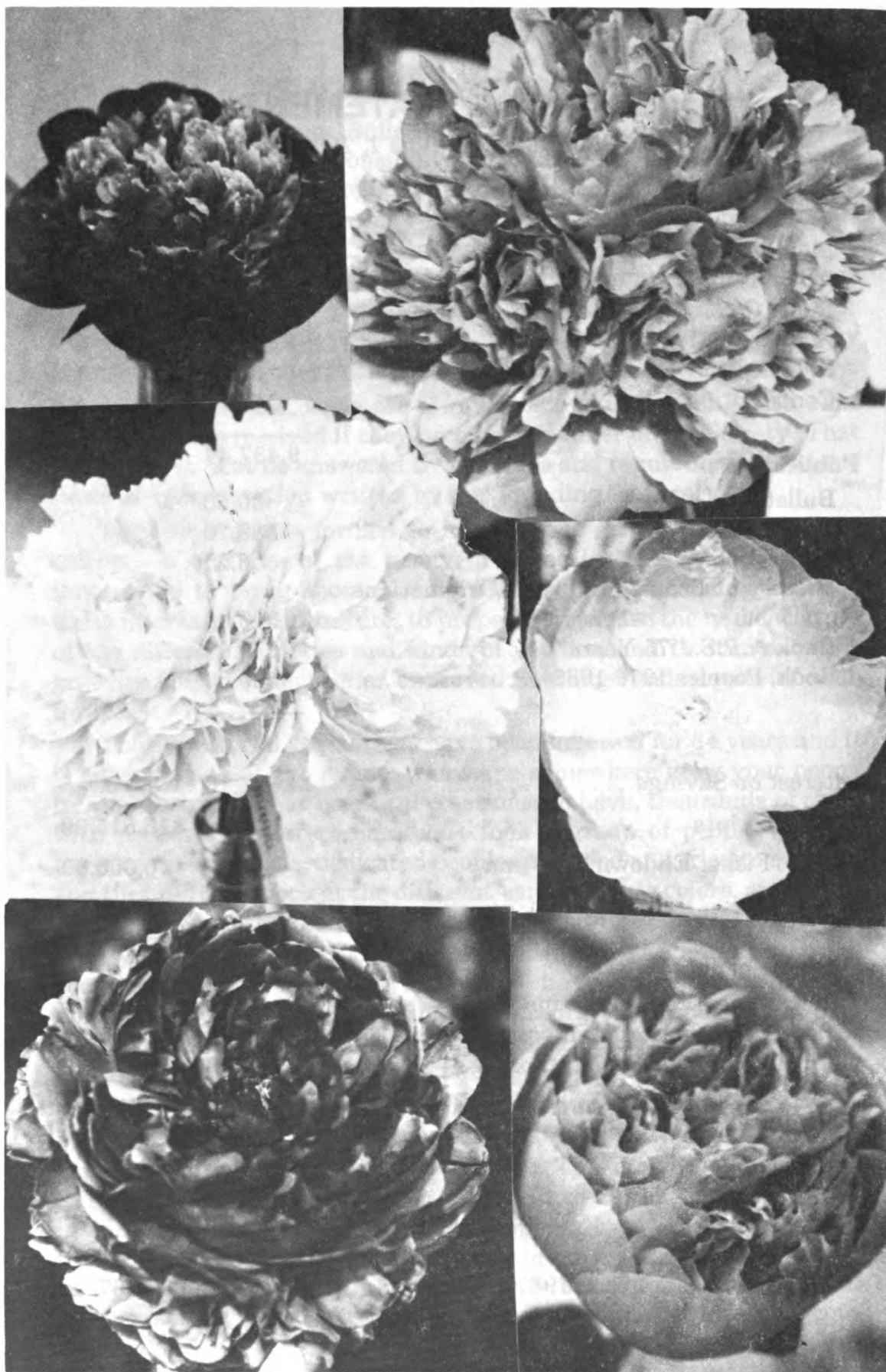
Publications - Four Bulletins:

June, September, December, March	3,849.00
American Peony Society Postage	1,434.50
Office Supplies	1,045.63
Exhibitions	125.00
Printing	2,729.13
Miscellaneous	36.00

Total Disbursements \$9,219.26

Balance on hand, June 1, 1987 \$66,667.11

Greta M. Kessenich, Secretary/Treasurer



Photographs by Edward Lee Michau

**Nellie Saylor
Dolorodell
Carol**

**Blanche King
Pink Princess
Etched Salmon**

SHORT LIST OF MODERN LACTIFLORA HERBACEOUS PEONIES

*Prepared for lecture given for the Perennials
Continuing Education Course by Roy Klehm.*

Twelve Fine White Peonies

Bowl of Cream	Gold Standard
Bridal Icing	Honey Gold
Cheddar Cheese	Ivory Jewell
Cheddar Gold	Krinkled White
Elsa Sass	Miss America
Florence Nicholls	Mothers Choice

Sixteen Fine Cream to Pale Pink Peonies

Angel Cheeks	Mrs. F. D. Roosevelt
Dawn Pink	Nick Shaylor
Do Tell	Norma Volz
Fairys Petticoat	Pillow Talk
Golly	Pink Lemonade
Hermione	Raspberry Sundae
Moon River	Top Brass
Moonstone	Whopper

Twelve Fine Mid to Deep Pink Peonies

Barrington Belle	Nice Gal
Cora Stubbs	Pink Jazz
Dinner Plate	Pink Parfait
Emma Klehm	Pink Princess
First Lady	Princess Margaret
Glory Hallelujah	Vivid Rose

Twelve Fine Red Peonies

Best Man	Hoosierland
Bonanza	Kansas
Camden	Lowell Thomas
Commanche	Maestro
Douglas Brand	Raspberry Ice
Felix Supreme	Tom Eckhardt

Fourteen Fine Pink and Salmon Hybrid Peonies

Ann Berry Cousins	Lovely Rose
Brightness	Ludovica
Cytherea	Paula Fay
Ellen Cowley	Salmon Chiffon
Etched Salmon	Salmon Dream
Eventide	Salmon Glory
Flame	Soft Salmon Saucer

Twenty Fine Red and Scarlet Hybrid Peonies

America	Heritage
Gurma Ruby	Illini Warrior
Burma Midnight	Montezuma
Blaze	Old Faithful
Buckeye Belle	Postilion
Cardinals Robe	Red Charm
Commando	Red Grace
Dad	Red Red Rose
Diana Parks	Scarlet O'Hare
Firebelle	Walter Mains

Five Fine Truly Coral Hybrid Peonies

Coral Charm	Coral 'N' Gold
Coral Sunset	Pink Hawaiian Coral
Coral Supreme	

Eight Fine White, Cream, Buff and Light Yellow Hybrid Peonies

Athena	Marie Fischer
Claire de Lune	Moonrise
Cream Delight	Prairie Moon
Ivory White Saucer	Sunny Boy

SHORT LIST OF FIFTEEN MODERN FINE ROCK GARDEN PEONY VARIETIES

Baby Face	Little Snippet
Diminutive Lady	Paladin
Dutch Dwarf	Royal Tot
Early Bird	Thumbelina
Early Scout	Tinkerbelle
Fairy Princess	Toy Delight
For Heavens Sake	Wee Willie
Lit'l Sweetie	

SHORT LIST OF TWELVE FINE FRAGRANT LACTIFLORA PEONIES

Ala Mode	Moon River
Angel Cheeks	Pink Lemonade
Cheddar Gold	Raspberry Sundae
Dinner Plate	Susie Q
Fairys Petticoat	Sweet 16
Honey Gold	Vivid Rose

SHORT LIST OF TWELVE DELICATELY BEAUTIFUL MODERN LACTIFLORA PEONIES IDEAL FOR CUTTING AND BRINGING INTO YOUR HOME

Bridal Icing	Cora Stubbs
Chiffon Parfait	Florence Nicholls
Mister Ed	Hermione
Raspberry Ice	Moonstone
Top Brass	Mrs. Livingston Farrand
Pillow Talk	Norma Volz

SHORT LIST OF MODERN TREE PEONY VARIETIES

Twelve Fine Moutan Varieties of Japanese Origin

Godaishu	Kamada Nishiki
Hana Kisoi	Kokumon
Hinode Sekai	Renkaku
Horokumon	Shintenchu
Howki	Taiyo
Kamada Fuji	Yachiyo Tsubaki

Twenty-Four Fine Saunders Hybrid Tree Peony Varieties

Age of Gold	Hesperus
Alhambra	High Noon
Banquet	Marchioness
Black Pirate	Mystery
Canary	Orion
Chinese Dragon	Phoenix
Coronal	Renown
Golden Bowl	Right Royal
Golden Hind	Savage Splendor
Golden Isles	Spring Carnival
Golden Vanitie	Thunderbolt
Harvest	Vesuvian

Twenty Fine Daphnis and Gratwick Tree Peony Varieties

Arethusa	Icarus
Artemis	Iphigenia
Boreas	Leda
Chore	Lilith
Companion of Serenity	Marie Laurencin
Demetra	Persephone
Ezra Pound	Redon
Gauguin	Themis
Guardian of the Monastery	Tria
Hephestos	Zephyrus

SHORT LIST OF SIX MODERN FINE ITOH HYBRID PEONIES

Border Charm	Yellow Emperor
Garden Treasure	Yellow Heaven
Yellow Crown	Yellow Treasure

PEONY VARIETIES AWARDED GOLD MEDAL BY THE AMERICAN PEONY SOCIETY SINCE

1956 Red Charm	1980 Cytherea	1956
1956 Miss America	1981 Bowl of Cream	
1957 Kansas	1982 Westerner	
1959 Moonstone	1983 Chinese Dragon (Tree Peony)	
1971 Miss America	1984 Dolorodell	
1972 Nick Shaylor	1985 Burma Ruby	
1973 Age of Gold (Tree Peony)	1986 Coral Charm	
1974 Walter Mains	1987 Norma Volz	
1975 BuTe	1987 Norma Volz	

PEONY'S CHARM IS ROOTED IN MEMORY

By Irma Bartell Dugan, Cleveland, Ohio, Plain Dealer, June 12, 1987

[Permission given to reprint]

Most highly valued plants are not necessarily the most imposing. They often are the cherished keepsakes from friends and family.

It is just as easy to develop a sentimental attachment to pretty rocks and driftwood from memorable places. Gardeners are noted for these and other pleasant eccentricities.

We have just finished celebrating the annual blooms of a specimen tree peony which was a housewarming gift nearly three decades ago from the late Isabel Zucker of Bloomfield Hills, Michigan.

Zucker, a horticulturist, garden writer and landscape designer, also is remembered as a decisive person. She declared that a yellow tree peony would look perfect next to our garden gate, and she was right, as usual.

The area is open to full sun and free of seriously competitive roots. The viewing position is good, which is important when the massive flower heads unfold.

Ruffled pastel-yellow petals deepen to a maroon tinge in the center of 8-inch blossoms. Luscious-looking tree peony blossoms are not fragrant, but plants compensate in many other ways.

Our dependable specimen, whose name has been forgotten, has flourished and has grown steadily. Its proportions are now about 4 feet high and wide.

Tree peonies can go higher and wider, depending on the variety, soil, climate and care. They actually are shrubby, rather than treelike, with woody stems that do not die back over Winter.

Foliage is similar but less coarse than the more common her-

baceous peonies which die back to the ground each Winter, and send new shoots from the hardy roots in Spring.

Tree peony blooms tend to be larger and appear a week or two earlier in May than the herbaceous ones. This year and on other occasions, there was noticeable overlapping of bloom time.

Tree peonies, an ancient royal race of plants from the Orient, have been cultivated since the sixth century. The Chinese regarded them as sacred and for many years would not export them.

Eventually, modern varieties originated in Japan and Europe as selections and bud sports of the Chinese *Paeonia suffruticosa*, and as hybrids between *P. suffruticosa* and *P. lutea*.

The Japanese concentrated on developing single and semi-double forms of improved texture and colors, while European plant breeders demonstrated their preference for very double blooms.

Plants were not imported to the United States until the 1800's. Then, as now, they command high prices.

It is not uncommon to pay dearly for a plant of exotic beauty that is hardy and requires minimum maintenance. In the case of tree peonies, complicated propagation also affects pricing.

Cuttings have never been very successful.

Seeding is slow and uncertain because the progeny cannot be counted on to duplicate desirable characteristics.

Layering works well but demands too much time of commercial nurserymen. The layering procedure is to bend outer branches to the ground and cover them with several inches of soil.

Branches can be held in position in the soil with coat hangers bent like hairpins. Or use sturdy Y-shaped prunings from a tree or shrub.

It may take two or three years for small new plantlets to form along layered branches.

Cleft-grafting has been the most common method of propagating tree peonies. Scion wood from tree peonies is grafted onto rootstock of herbaceous types.

The purpose is for support, until the scion develops its own root system. This is why gardeners are instructed to plant with the graft below soil level. The place where the graft was made is an easily identified lump or knob on the stem.

Generally, the recommendation is for the graft to go 2 inches deep, but some growers prefer to go down 4 to 6 inches. They found that the scion wood roots better and faster that way, especially in porous, organic soils.

One would think that a plant with a well-rooted scion could be propagated by simple division of the clump. It can be, but scion wood is exceptionally hard. After digging up the clump, it takes a sharp saw and considerable strength to separate it.

Full sun and well-drained soil generously improved with organic matter are important, but they will do well with a half day of sun. In fact, many gardeners say a bit of shade lengthens the life and color of blooms.

By using cow manure, peat moss and leaf humus, we raised the planting bed 6 inches or so for our double yellow.

It stands alone as a single specimen at the start of a curved perennial border, an impressive way to show it off. At the base are low annuals, varied in kind and color from year to year.

Groupings are spectacular, if you have the space and money to spare. Suitable spacing is 5 feet apart on center.

Grayish-green tree peony leaves remain lush and healthy until frost, when they, along with exceptionally long petioles (leaf stalks), fall in a heap.

Collect and destroy those leaves. They look unsightly at the base of the plant and could harbor disease spores. Allow stems to remain intact.

On the other hand, stems of herbaceous peonies should be cut back close to the ground, but not until after hard frost cause them to wither and turn brown. Another reason not to be in a hurry about cutting them down is that Autumn coloration is a pleasing, decorative dull maroon.

Tree peonies are not pruned except to remove faded flowers and any dead or injured parts.

Give a tree peony the best possible start in life at planting time, because it can be left untouched and undivided indefinitely—or until you move and want to take it along.

If transplanting is essential, do it in September and October, as with herbaceous kinds. It is not too much to dig a hole 2 feet deep and 3 feet wide in preparation for planting.

When composted barnyard manure is used, spread it about 6 inches thick beneath 2 inches of backfill, and then put the root in position.

The backfill can consist of a 50-50 mixture of existing soil with peat moss, leaf humus or compost. Add several handfuls of bone meal to a bushel of backfill.

It is a good practice to spread a mulch the first winter after planting. The purpose is to keep fluctuating temperature from moving the soil and exposing roots.

It is not uncommon for a few blooms to appear the first Spring after Fall planting. Colors range from white to shell pink, deep pink, rose, scarlet, maroon and shades of yellow. Blooms can measure 8 to 12 inches across.

Soil should not be highly acid. If the pH level is questionable, have the soil tested and use ground limestone to make any necessary adjustments to the near-neutral range.

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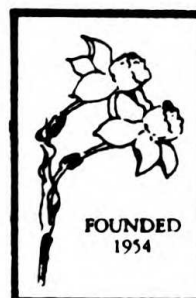
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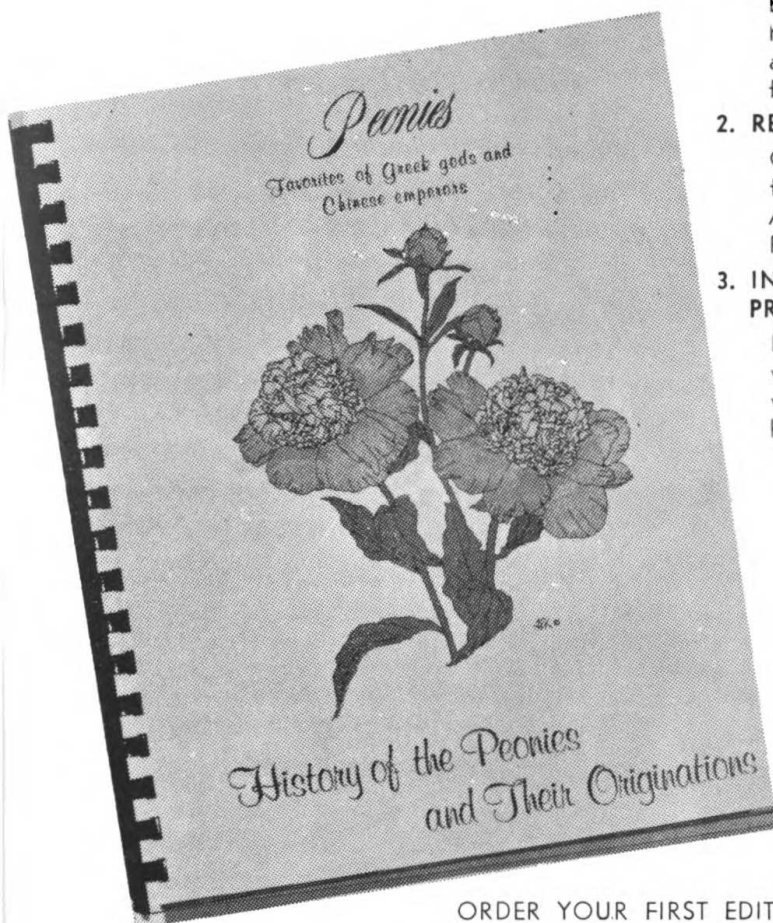
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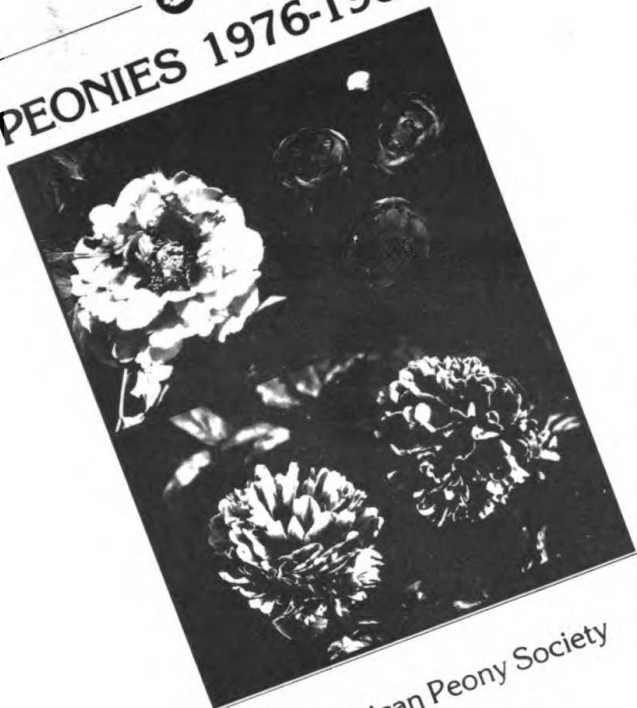
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